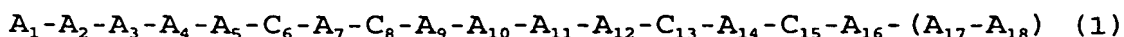


ABSTRACT

Peptide-based compounds containing four invariant cysteine residues which have been optionally oxidized to contain two intramolecular disulfide bonds, or modified forms where the cysteines are replaced are useful as preservatives and in preventing, treating, or ameliorating viral or microbial infection in animals and plants, and in inactivating endotoxin. These compounds, in one embodiment, are of the formula:



and the N-terminal acylated and/or C-terminal amidated or esterified forms thereof, which is either in the optionally -SH stabilized linear or in a cystine-bridged form wherein each of A_1 and A_9 is independently a basic amino acid;

each of A_2 and A_3 is independently a small amino acid;

each of A_5 , A_7 , A_{12} , A_{14} and A_{16} is independently a hydrophobic amino acid;

A_4 is a basic or a small amino acid;

A_{10} is a basic or a small amino acid or is proline;

A_{11} is a basic or hydrophobic amino acid;

A_{17} is not present or, if present, is a small amino acid;

A_{18} is not present or, if present, is a basic amino acid; or a

modified form of formula (1) and the N-terminal acylated and/or C-terminal amidated or esterified forms thereof wherein each of 1-4 cysteines is independently replaced by a hydrophobic amino acid or a small amino acid.